ABSTRACT

The invention discloses newly-discovered phosphorylation sites in human IRS-1 and IRS-2, serine 1101 (Ser1101) and serine 1149 (Ser1149) respectively, and provides antibodies, both polyclonal and monoclonal, that selectively bind to IRS-1 and/or IRS-2 when phosphorylated at these respective sites, but do not bind to IRS-1 and/or IRS-2 when not phosphorylated at these respective sites. The sites are relevant to insulin-resistance in type 2 diabetes. Also provided are methods for determining the phosphorylation of IRS-1/2 or activity of PKC theta in a biological sample, by using a detectable reagent, such as the disclosed antibodies, that binds to IRS-1/2 only when phosphorylated at Ser1101/Ser1149. Kits comprising the phospho-IRS-1/2 (Ser1101/1149) antibodies of the invention are also provided.